

# FY15 RSM-EWN IPR

## Mobile District, Beneficial Use of Dredged Material to Fill Oyster Dredged Holes in Mobile Bay

Larry Parson, Nate Lovelace and Elizabeth Godsey

**BLUF:** The purpose of the study is to investigate opportunities and develop a strategy to beneficially use dredged material to restore the bay bottom in areas where historic oyster shell mining activities created numerous holes in the Mobile Bay.

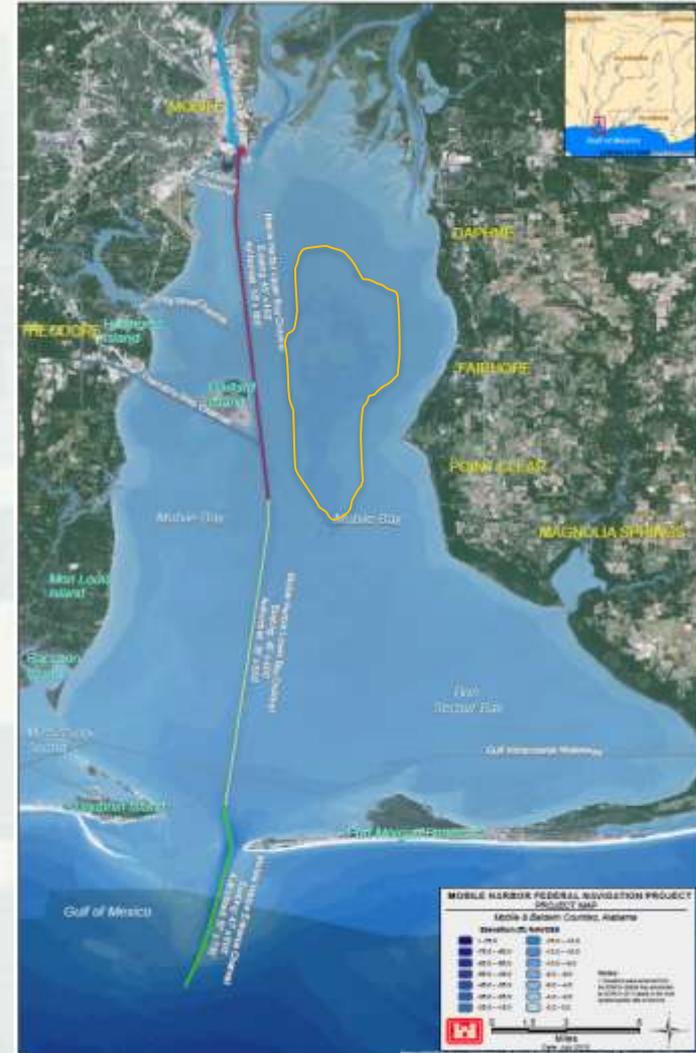
### Problem Statement/Issue

Management of four million cubic yard of material dredged per year from the Mobile Bay Federal Navigation Channel which has primarily been placed in the ODMDS site since WRDA 1986.

Thousands of acres of natural bay bottom deepened in areas of the north eastern and central portion of the bay to depths greater than 15 ft through the removal of oyster shell between 1947 and 1982.

### Approach to Address Problem (non-technical)

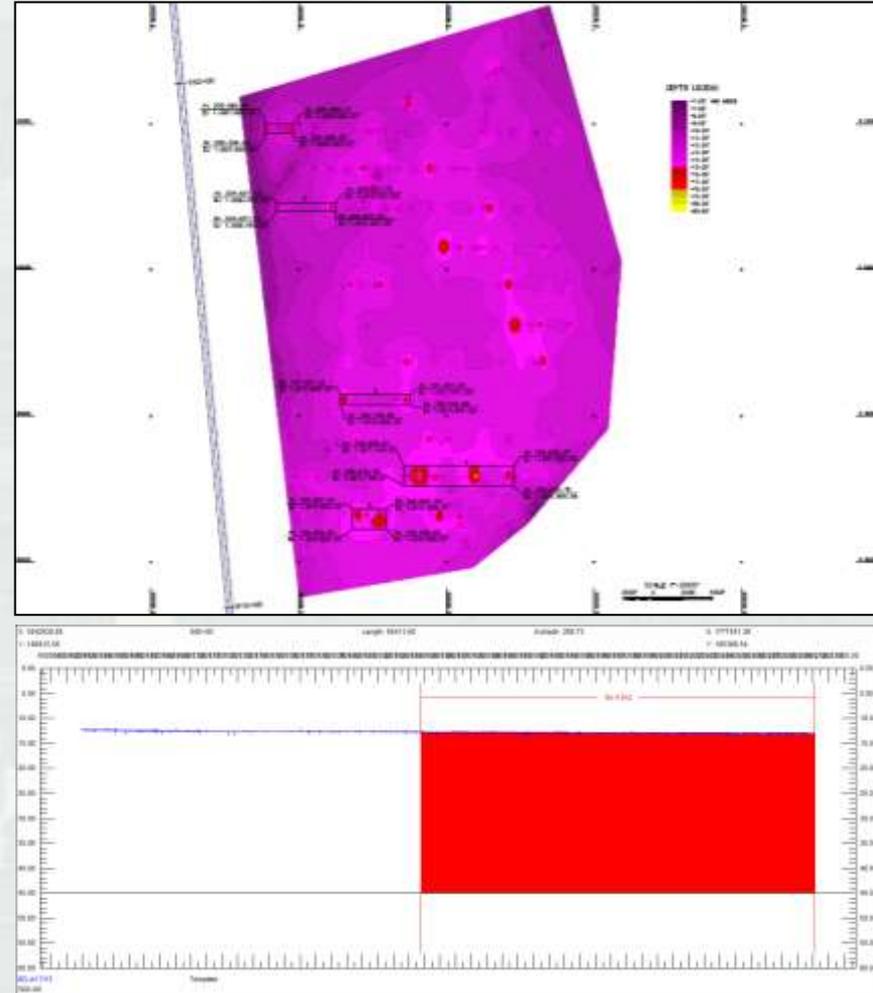
- Continue to leverage with the Mobile Bay RSM/BU to investigate opportunities and develop strategies to beneficially use dredged material in the bay.
- Restore existing bay bottom habitat with dredged material.



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### Approach to Address Problem (Tools, Models, Technologies)

- Review historic surveys throughout Mobile Bay to identify potential location of historic dredged oyster shell mining pits
- Conduct Multi-beam survey to determine if existing dredged oyster shell mining pits still remained and if so to what depths
- Use sediment probing and grab samples to determine sediment characteristics of surface samples collected from the historic dredged oyster locations and existing undisturbed native bottoms
- ADCNR testing of dredged sand/gravel material from Tennessee Tombigbee for potential use in oyster bed restoration



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### USACE RSM PDT

- Larry Parsons, RSM Project Manager
- Nate Lovelace, Dredge Material Project Manager
- Elizabeth Godsey, RSM Engineering Technical Lead

### Stakeholders/Partners

- Alabama State Port Authority (ASPA)
- Alabama Dept. of Environmental Management (ADEM)
- Alabama Dept. of Conservation and Natural Resources (ADCNR), State Lands Division
- ADCNR, Marine Resources Division (MRD)
- U.S. Fish and Wildlife Service (FWS)
- National Marine Fisheries Service (NMFS), Habitat Conservation Division
- Mobile Bay National Estuarine Preserve (NEP)
- Dauphin Island Sea Lab (DISL)

### What key leveraging opportunity(s) of stakeholders/partners

- Hosting Mobile Bay Interagency Working Group Meetings
- Providing historic and current oyster mapping locations
- Providing assistance in scoping and conducting field work



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### UPs – 3 Positives from effort

- Data adds further validation to the 2012 Multiagency Regional Sediment Management/Beneficial Use geophysical scale modeling system
- Demonstrates to the Mobile Bay RSM/BU group that the Corps in coordination with the multiagency group continues to actively pursue additional environmentally and economically sound uses of dredged material from the Mobile Harbor
- Provided additional research, science and data which is helping develop an implementation strategy and could help move future federal as well as non federal actions forward



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### **DOWNs – 3 Negatives from effort**

- Project does not appear to be not favorable for beneficial use of Mobile Harbor Dredged Material
- Project will be more costly and likely will need to fall under the 204 Authority
- Will require more coordination with environmental agencies



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### Value to the Nation

- Leveraging resources -- Across USACE programs and project partners to reduce cost to projects.
- Increased partnership -- State oyster restoration program is currently paying \$50 per ton for 57 stone, this cost could be reduced to \$25-30 per ton if Tennessee Tombigbee gravel is found suitable for oyster restoration.
- Capacity of upland placement site saved -- Use of dredged material from existing upland disposal areas along the Tennessee Tombigbee Waterway would prolong availability of existing placement sites.
- Environmental benefits -- Restoration of oyster habitat which provides for juvenile fish and invertebrate habitat, increase feeding grounds for game fish (ie. grouper, snapper, ect.) and improved water clarity (plankton and suspended sediment filtration).

